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Nags Head - Kill Devil Hills

Thoroughfare Plan

NORTH CAROLINA STATE HIGHWAY COMMISSION

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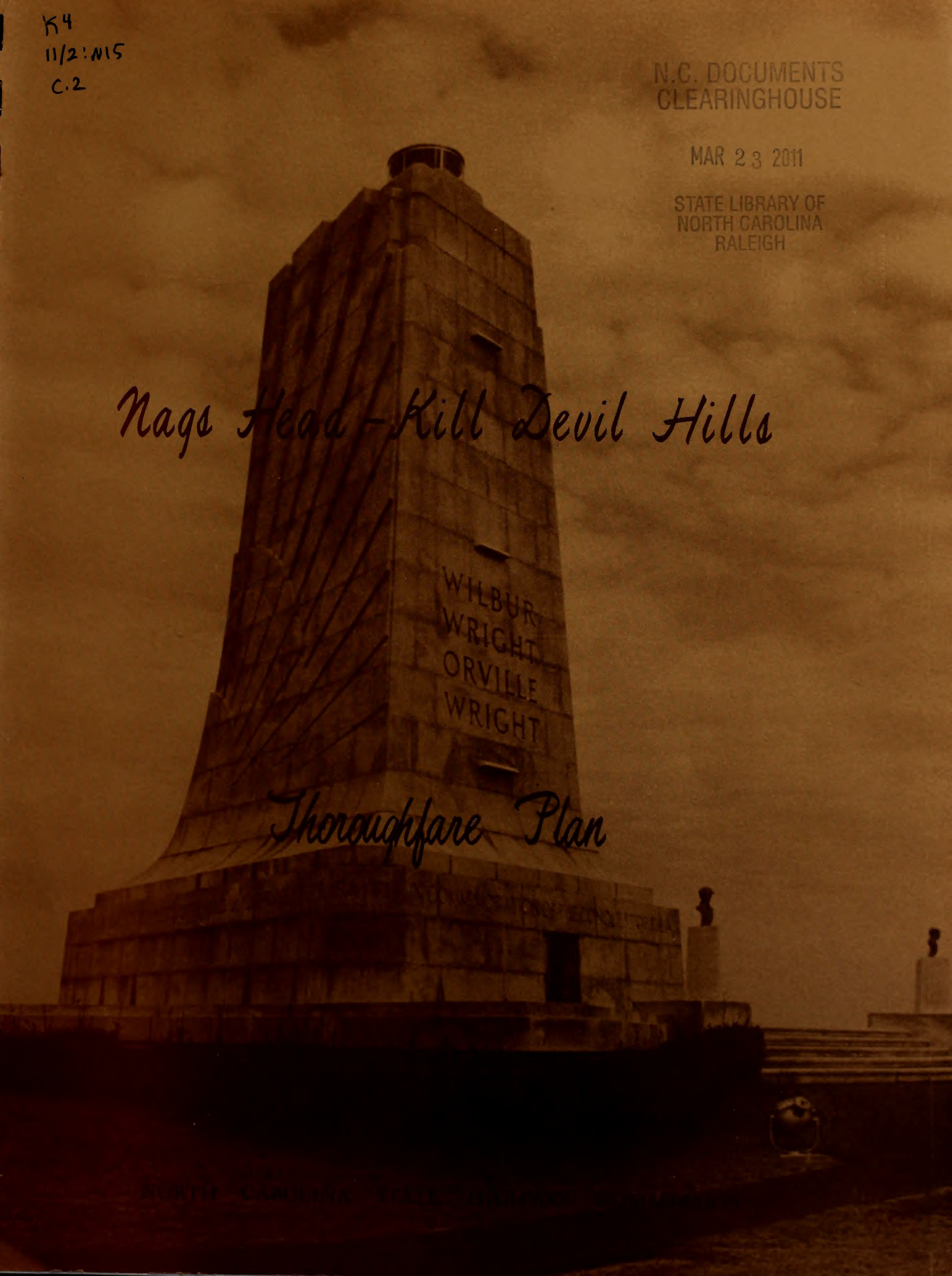

Nags Head - Kill Devil Hills

Thoroughfare Plan

NORTH CAROLINA STATE HIGHWAY COMMISSION

PRELIMINARY THOROUGHFARE PLAN

for

NAGS HEAD AND KILL DEVIL HILLS, NORTH CAROLINA

Prepared by the

Planning and Research Department

North Carolina State Highway Commission

September, 1972

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I. INTRODUCTION

The following thoroughfare plan outlines a coordinated system of major streets and highways to serve as a basis for the future development of the Nags Head and Kill Devil Hills street systems.

The Nags Head and Kill Devil Hills plan was developed following the basic thoroughfare planning principles as described in Chapter II of this report. It is based on very general traffic, population, land use, and economic data. An analysis of existing traffic was done on the basis of historical growth patterns established by traffic counts over a six year period. Major and minor thoroughfares were located based on field investigations, aerial photos, existing and anticipated land uses, and topographic conditions. The plan sets forth those improvements which are expected to be required for proper traffic circulation within the current planning period (1972-1995).

The responsibility for the proposed improvements will be divided between the Highway Commission and the Towns of Nags Head and Kill Devil Hills. Since a number of governmental units are involved in developing the system, coordination is of primary concern. It is desirable that the thoroughfare plan be formally adopted both by the local governing bodies and the Highway Commission in order to insure coordination of efforts.

It should be emphasized that the plan is based on the anticipated growth of the area as indicated by current trends. Moreover, since additional study will be required before construction begins on the recommended improvements, the plan must be considered preliminary.

II. THOROUGHFARE PLANNING PRINCIPLES

Typically, an urban street system occupies 25 to 30 percent of the total developed land in the urban area. Since the system is permanent and expensive to build and maintain, much care and foresight are needed in its development. Thoroughfare planning is the process used by public officials to assure the development of the most logical and appropriate street system to meet existing and future travel desires within the urban area. The major steps involved in the thoroughfare planning process are:

1. Collecting data relative to present physical and travel conditions within the urban area.
2. Estimating future traffic conditions within the urban area.
3. Evaluating the data to determine the adequacy of the existing street system in meeting present and anticipated traffic conditions.
4. Devising the best thoroughfare plan, on the basis of sufficiency, economic benefits, construction costs, and compatibility with other elements of the urban development program, to meet future travel desires.
5. Implementing the plan.

Purpose of Planning

There are many benefits to be gained from thoroughfare planning, but the primary objective is to assure that the urban street system will be progressively developed in such a manner as to adequately serve future travel desires. Thus, the cardinal concept of thoroughfare planning is that provisions be made for street and highway improvements so that, as needs arise, feasible opportunities to make improvements exist.

The major benefits derived from thoroughfare planning are: (1) Each street can be designed to perform a specific function. This permits savings in rights-of-way, construction and maintenance costs, protects residential neighborhoods, and encourages stability in travel and land use patterns.

(2) Local officials and citizens are informed as to future improvements. Developers can design subdivisions to function in a non-conflicting manner. School and park officials can better locate their facilities. Irretrievable damage to property values and community appearance, as is sometimes associated with street building and widening programs, can be minimized. City officials will know when improvements will be needed and can schedule funds accordingly.

Thoroughfare Concept

Streets perform two primary functions -- they provide traffic service and land service. These two functions, when combined, are basically incompatible. The conflict is not serious if both traffic and land service demands are low. But when traffic volumes are high, conflicts created by uncontrolled and intensely used abutting property result in intolerable traffic flow friction and congestion.

The underlying concept of the thoroughfare plan is that it provides a functional system of streets which permits travel from origins to destinations with directness, ease, and safety. Different streets in the system are designed and called on to perform specific functions, thus minimizing the traffic and land service conflict. Streets can be categorized as to function and standards applied as follows (Figure 1):

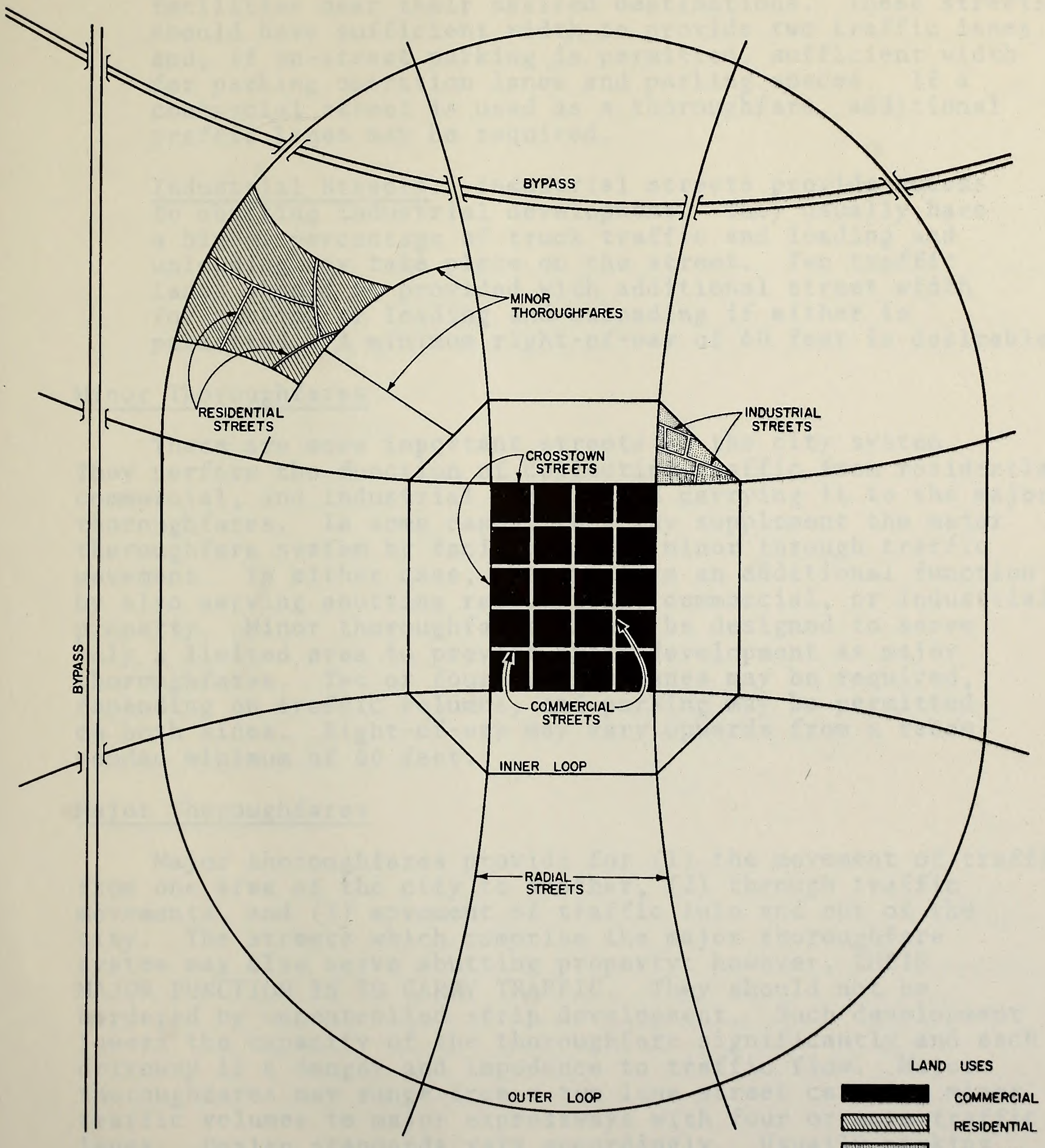
Local Access Streets

These streets have the purpose of providing access to abutting property. They are not intended to carry heavy volumes of traffic and should be located in such a way to serve only traffic with origins or destinations on these streets. There are several different types of local access streets which can be classified according to the type of abutting land use which they serve. They are:

> *Residential Streets*: Residential streets provide access to abutting residential property. Through traffic movements should be discouraged by designing them as loops or cul-de-sacs (dead-end streets with turn arounds). These streets should have two traffic lanes and may have parking on one or both sides. They should have a minimum right-of-way of 60 feet.

FIGURE I

IDEALIZED THOROUGHFARE PLAN



Commercial Streets: Commercial streets provide access to abutting commercial property. They permit traffic to circulate in commercial areas and to reach parking facilities near their desired destinations. These streets should have sufficient width to provide two traffic lanes; and, if on-street parking is permitted, sufficient width for parking operation lanes and parking spaces. If a commercial street is used as a thoroughfare, additional traffic lanes may be required.

Industrial Streets: Industrial streets provide access to abutting industrial development. They usually have a higher percentage of truck traffic and loading and unloading may take place on the street. Two traffic lanes should be provided with additional street width for parking or loading and unloading if either is permitted. A minimum right-of-way of 60 feet is desirable.

Minor Thoroughfares

These are more important streets in the city system. They perform the function of collecting traffic from residential, commercial, and industrial streets and carrying it to the major thoroughfares. In some cases, they may supplement the major thoroughfare system by facilitating a minor through traffic movement. In either case, they perform an additional function by also serving abutting residential, commercial, or industrial property. Minor thoroughfares should be designed to serve only a limited area to prevent their development as major thoroughfares. Two or four traffic lanes may be required, depending on traffic volumes, and parking may be permitted on both sides. Right-of-way may vary upwards from a recommended minimum of 60 feet.

Major Thoroughfares

Major thoroughfares provide for (1) the movement of traffic from one area of the city to another, (2) through traffic movements, and (3) movement of traffic into and out of the city. The streets which comprise the major thoroughfare system may also serve abutting property; however, THEIR MAJOR FUNCTION IS TO CARRY TRAFFIC. They should not be bordered by uncontrolled strip development. Such development lowers the capacity of the thoroughfare significantly and each driveway is a danger and impedance to traffic flow. Major thoroughfares may range from a two-lane street carrying minor traffic volumes to major expressways with four or more traffic lanes. Design standards vary accordingly. Usually parking should not be permitted on major thoroughfares.

Idealized Major Thoroughfare System

A coordinated system of major thoroughfares forms the basic framework of the planned urban street system (Figure 1). This system, while generally involving about 25 percent of the total street mileage, carries about 80 percent of the total traffic. Major thoroughfares can be divided into four categories: radial streets, crosstown streets, loop streets, and bypasses.

Radial Streets

Radial streets provide for direct traffic movement between the central area and outlying areas. This is a major movement in most cities and the economic strength of the central area depends heavily on the adequacy of the radial thoroughfares.

The Crosstown System

If all radial streets crossed in the central area, an intolerable congestion problem would result. To avoid this problem, it is very important to have a system of crosstown streets which forms a loop around the central business district. These streets route traffic along the border of the central area as it moves from origins on one side to destinations on the other. The system also allows central area traffic to circle the central area and enter near its destination. The effect of a good crosstown system is to free the central area of crosstown traffic, thus permitting the central area to better function in its role as a pedestrian shopping area.

The Loop System

Loop streets move traffic between suburban areas of the city. Although a loop may completely encircle the city, a typical trip would be from an origin near a radial thoroughfare to a destination near another radial thoroughfare. Loop streets do not necessarily carry heavy volumes of traffic, but they function to help relieve central area congestion and shorten travel times between suburban areas. There may be one or more loops, depending on the size of the urban area, and they are generally spaced one-half mile to one mile apart, depending on the intensity of land use.

The Bypass

Bypasses function to carry traffic through or around the urban area. They are usually designed to rural highway standards with control of access. The general effect of the bypass is to expedite the movement of through traffic and to lessen traffic congestion within the city.

Occasionally a low traffic volume bypass can be designed to function as a portion of an urban loop.

Philosophy of Approach

The above description of the idealized thoroughfare system applies to an idealized situation. While the same basic principles apply, it is not the purpose of the thoroughfare plan to present an idealistic pattern superimposed on the existing street system. Thoroughfare planning is done for established urban areas and based on anticipated future development. Residential areas, schools, shopping center locations, major industrial areas, railroads, public and semi-public land use locations, topographical features, and many other factors all exert influences on the locations of thoroughfares. It is also necessary that maximum advantage be taken of the existing basic street system which represents a major monetary investment and the thoroughfare plan must be compatible with other elements of the urban planning and development program.

III. POPULATION, LAND USE, AND TRAFFIC

Population Trends

The Nags Head and Kill Devil Hills Planning Area includes the Towns of Nags Head and Kill Devil Hills. Based on the 1970 Census Count the current population of the planning area is 771.

It is estimated that the population of Dare County will increase 40 percent during the period 1975-1995. Assuming the growth of Nags Head and Kill Devil Hills will follow past trends of increasing at a somewhat lower rate than Dare County, the 1995 estimated population of the planning area is 1280.

The above mentioned figures apply only to the permanent residences of Nags Head and Kill Devil Hills and do not account for the large influx of tourists to the Outer Banks every summer. According to the Statistics Analysis Branch of the U. S. Department of the Interior, projections for visits to Cape Hatteras National Seashore in 1975 will exceed two million visitors during the summer months. If this trend continues the Outer Banks region can expect an influx of more than three and one half million visitors by 1995.

Land Use Trends

To date, settlement in Nags Head and Kill Devil Hills has formed a pattern of distinct communities, except along the beaches where retail uses have intermingled among private and commercial beach cottages.

Industrial and commercial establishments unrelated to the tourist trade are small and relatively unimportant to the economy of the area. No future growth along these lines are anticipated in the future.

Because of the flourishing tourist business a trend toward expansion of tourist related commercial activity is apparent and the existing trend of random arrangement of mixed commercial and residential uses is expected to continue.

Traffic Volumes Trends

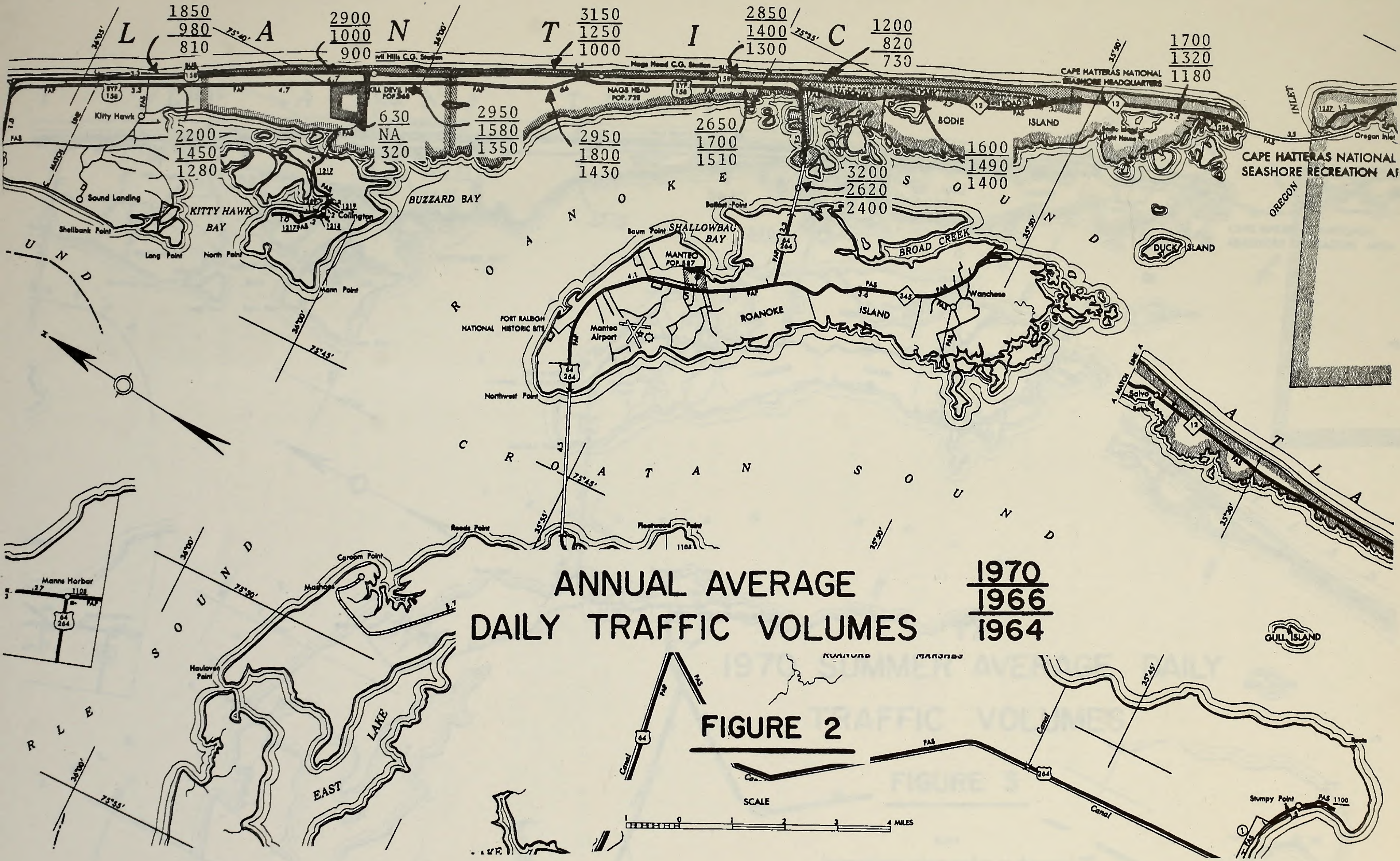
The Nags Head and Kill Devil Hills major street system and average daily traffic volumes for 1964, 1966, and 1970 are shown in Figure 2. The vehicles per day counts during the peak tourist season (summer months) are shown in Figure 3. On the average, the traffic volumes during the summer months are approximately 2.5 times the average daily traffic.

The streets having the highest ADT are US 158 Business (Virginia Dare Trail), US 158 Bypass, NC 12, and SR 1243.

Existing Major Streets

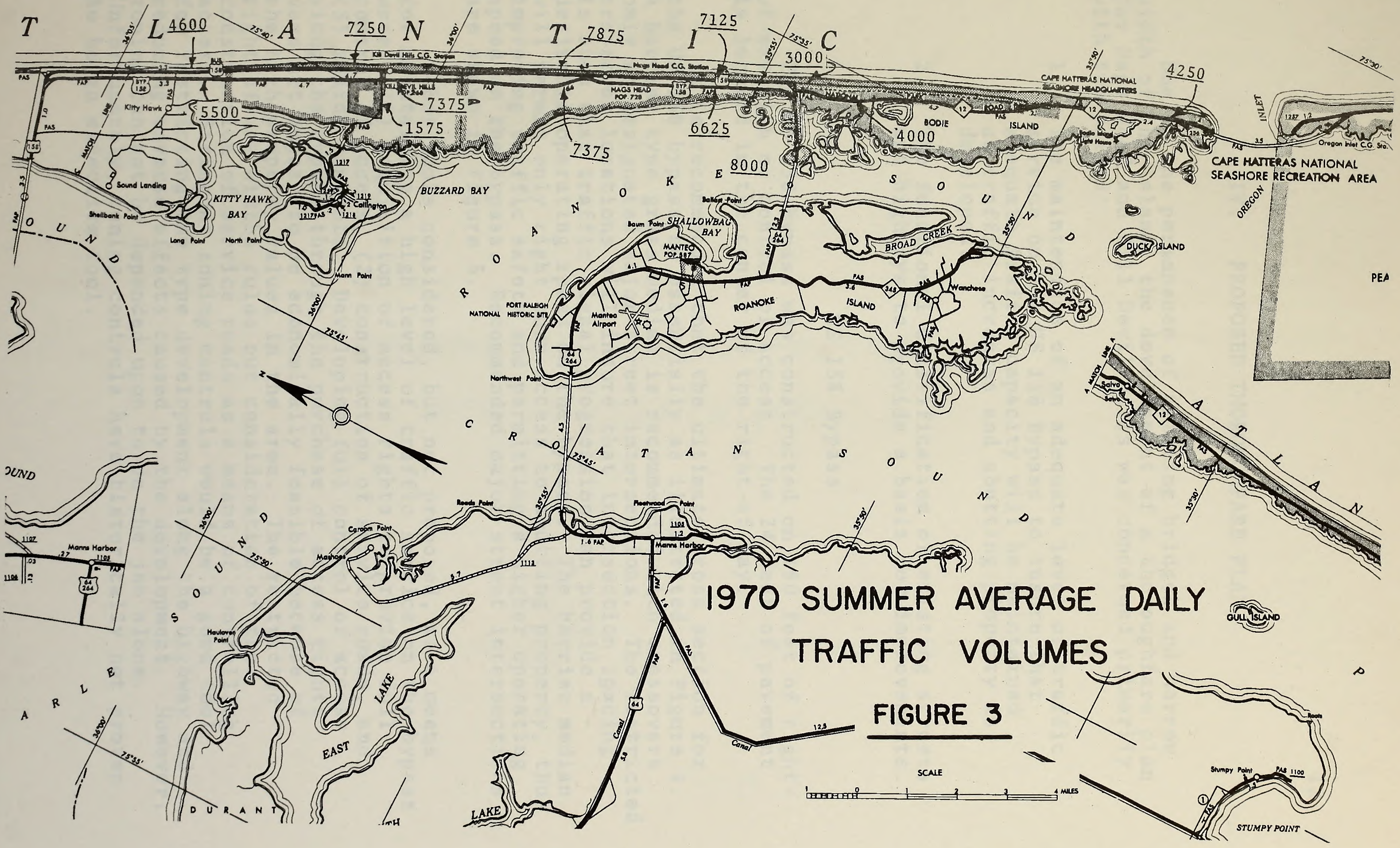
Nags Head and Kill Devil Hills major street system is comprised of two major streets that are parallel and transverse the planning area. US 158 Business (Virginia Dare Trail) – SR 1243 parallel the Atlantic Ocean side of the island while US 158 Bypass – NC 12 parallel the Roanoke Sound side.

On the basis of field investigations and existing traffic volumes no major capacity deficiencies currently exist in the planning area.



ANNUAL AVERAGE DAILY TRAFFIC VOLUMES

FIGURE 2



1970 SUMMER AVERAGE DAILY TRAFFIC VOLUMES

FIGURE 3

IV. PROPOSED THOROUGHFARE PLAN

Due to the permanence of existing bridges and narrow width of the island, the development of a thoroughfare plan for Nags Head and Kill Devil Hills was concerned primarily with two points:

1. The maintenance of an adequate level of traffic service on the US 158 Bypass to insure that adequate traffic capacity will be maintained as traffic increases and abutting property is developed.
2. The functional classification of existing streets and highways to provide a basis for improvements.

US 158 Bypass

The US 158 Bypass was constructed on 150 feet of right-of-way with no control of access. The 24 feet of pavement is located in the center of the right-of-way.

It is recommended that the ultimate cross section for the US 158 bypass be essentially as illustrated in Figure 4. A barrier type grass median is recommended with crossovers only at designated major street intersections. The restricted crossover locations will insure that intersection spacing is such that traffic signal progression can provide a desirable operating speed on the bypass. The barrier median will permit only right turn access to abutting property, thus improving traffic safety and permitting a higher operating speed on the bypass. Recommended major street intersections are shown in Figure 5.

Other tools considered, but not proposed, as a means for maintaining a high level of traffic service on the bypass were: (1) acquisition of access rights to provide full control of access, (2) construction of service roads, and (3) zoning controls. Developing full control of access along the bypass through the purchase of access rights does not appear to be economically feasible because of the high property values in the area. The restricted right-of-way widths rules out consideration of the construction of service roads as a means of controlling access. Stringent zoning controls would be a good tool for restricting the type development along the highway and reducing adverse effects caused by the development. However, zoning can not be depended upon to do the job alone. Unfortunately, zoning controls have historically not proven to be an effective tool.

RECOMMENDED CROSS SECTION
FOR US 158 BYPASS

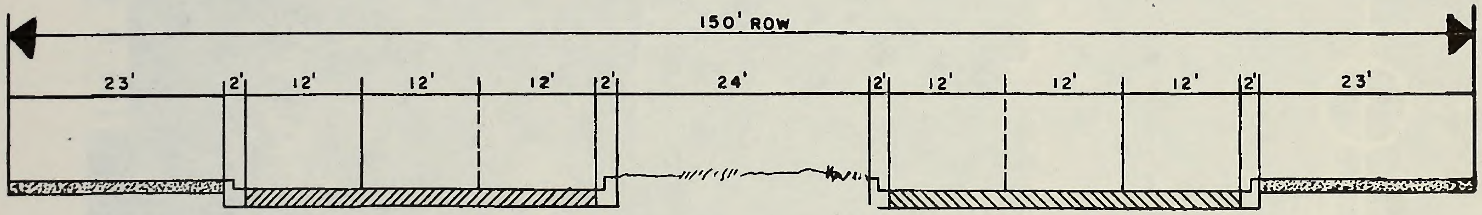
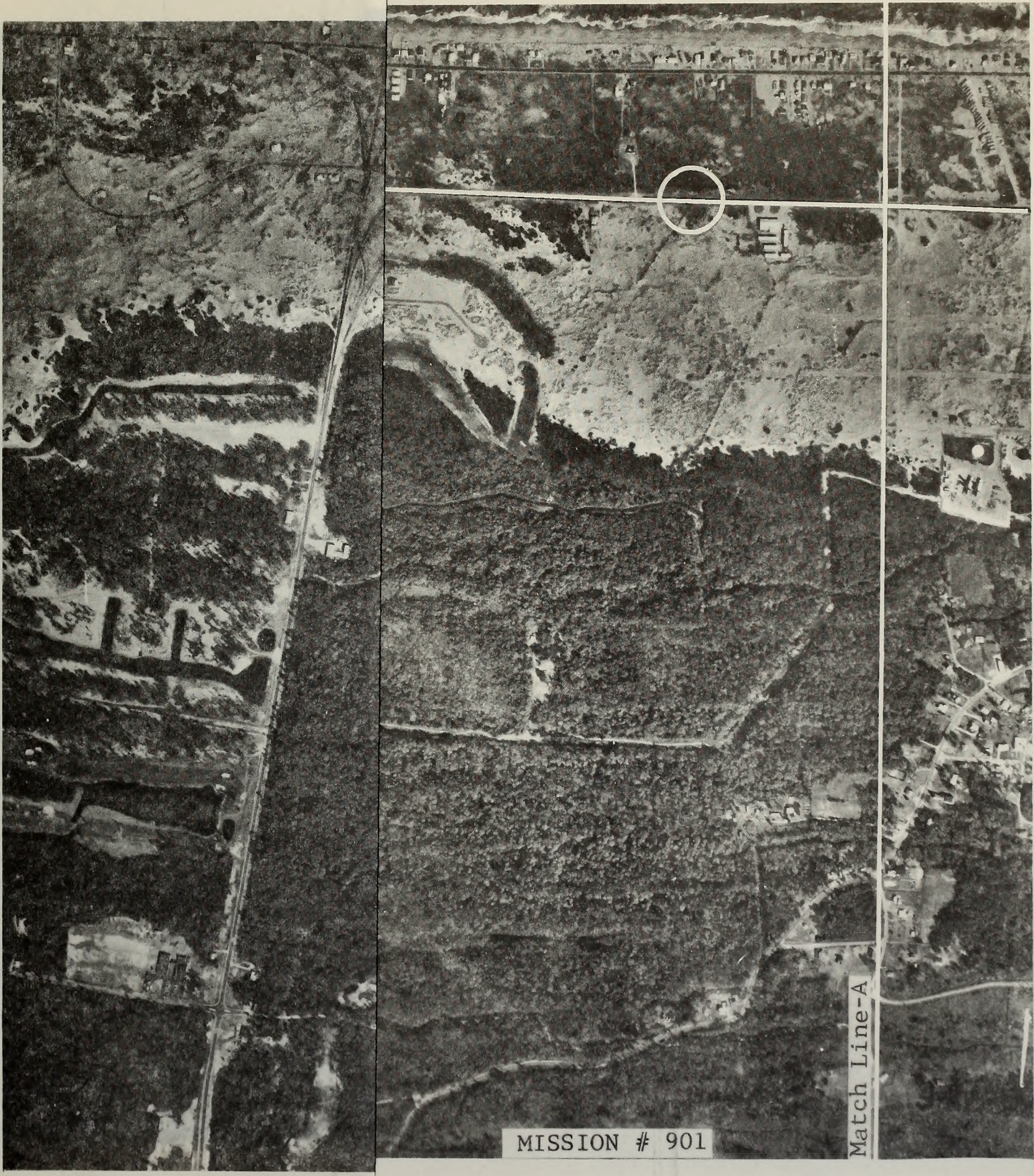


FIGURE 4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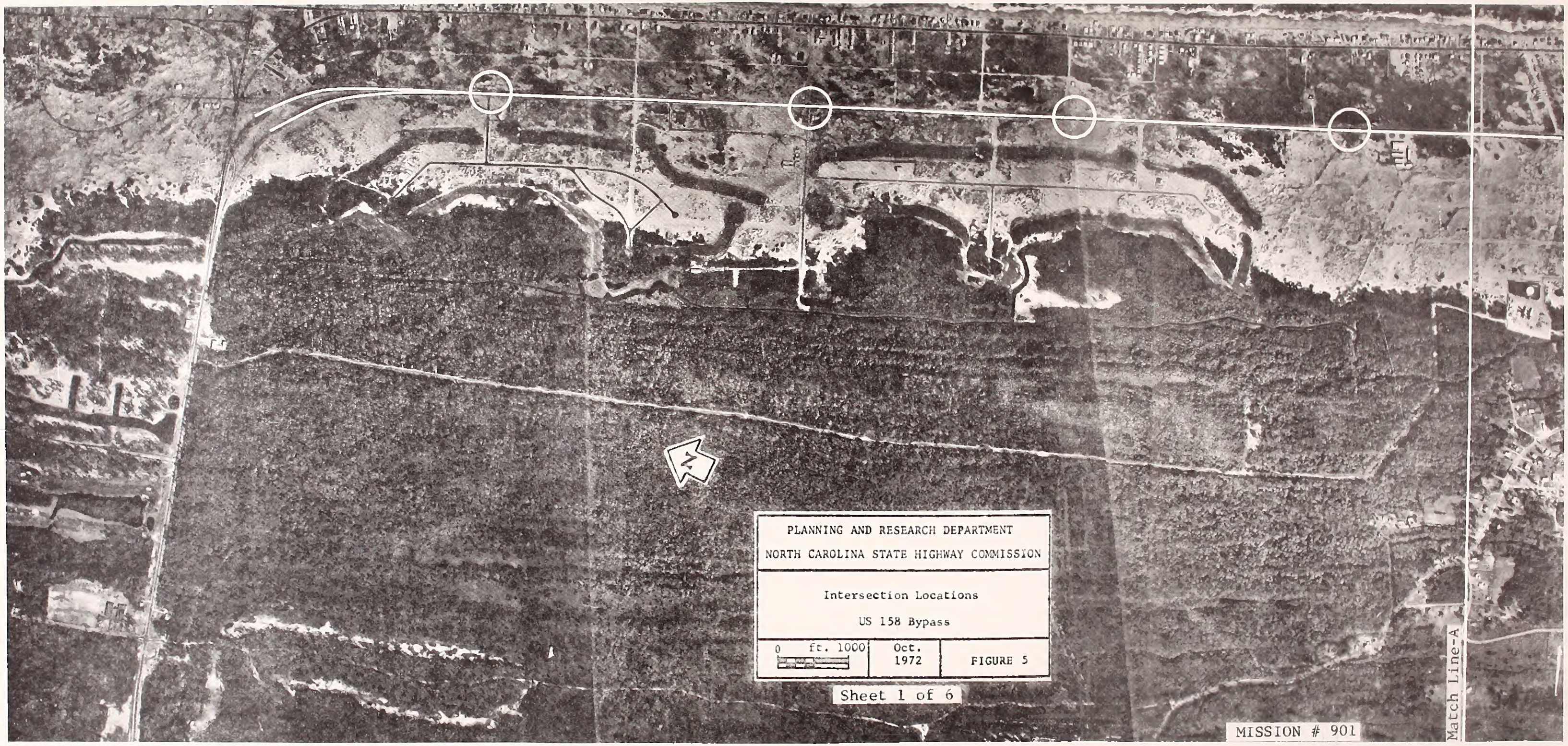
Match Line-A



PLANNING AND RESEARCH DEPARTMENT
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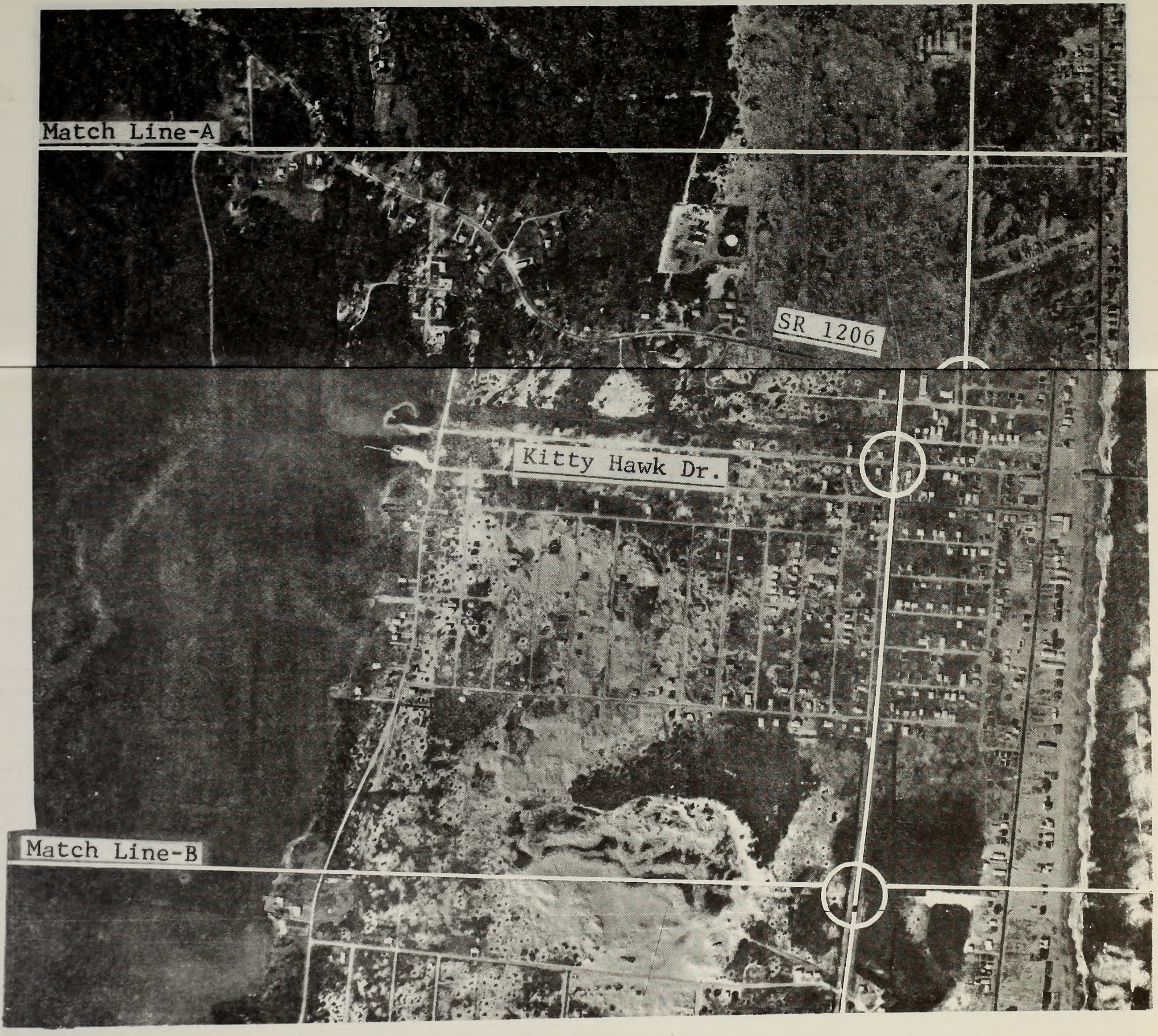
Intersection Locations

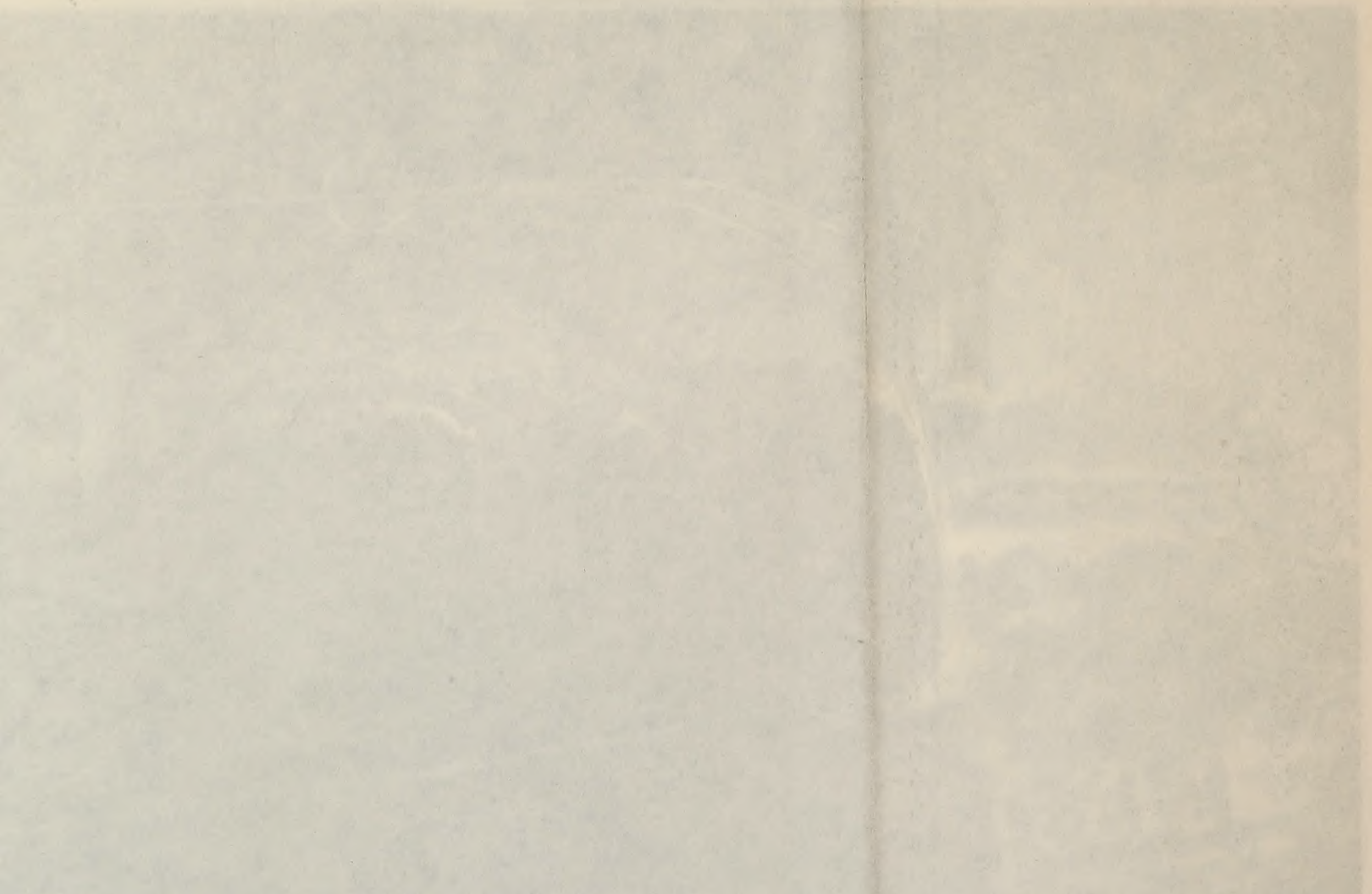
US 158 Bypass

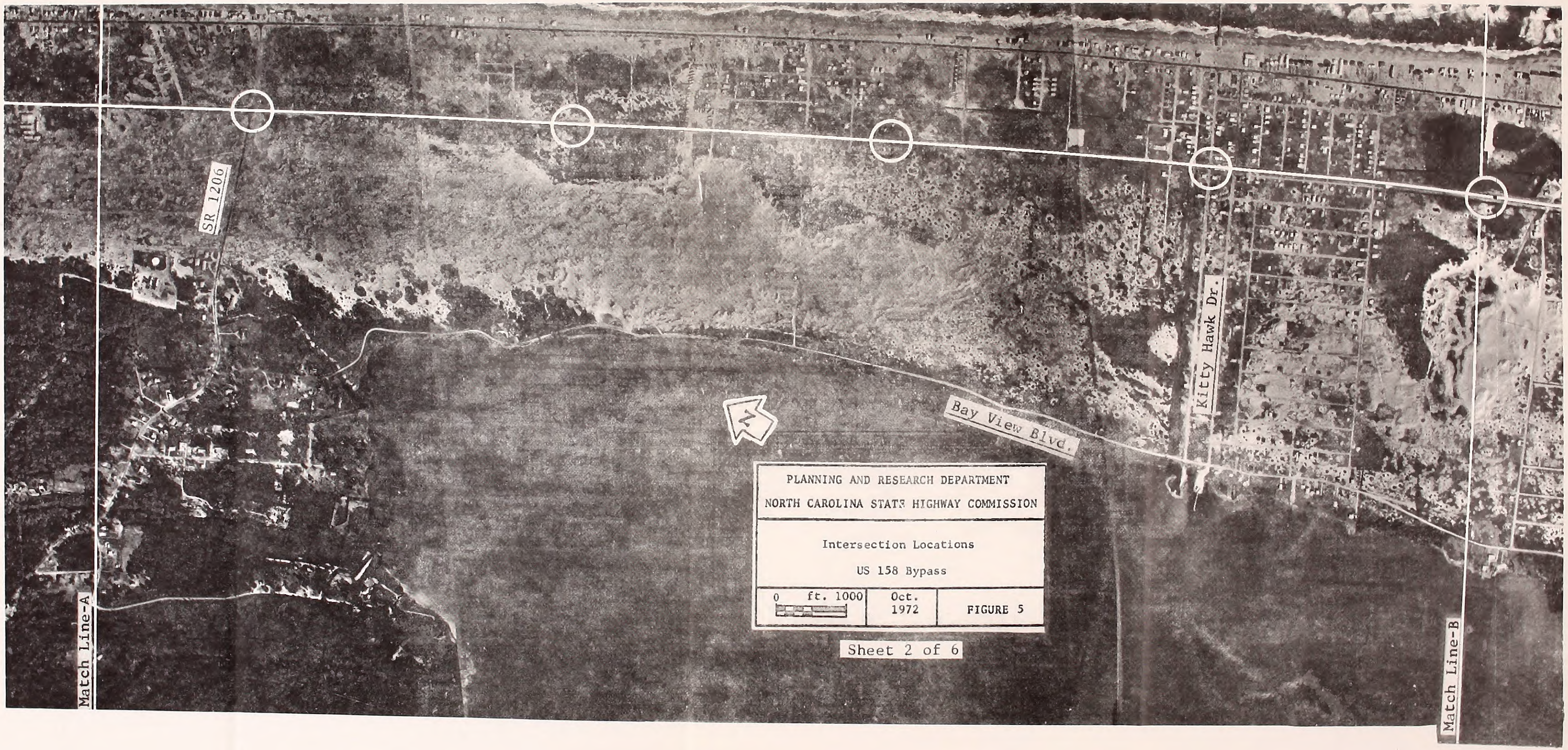
Oct. 1972

FIGURE 5

Sheet 1 of 6


Match Line-A
SR 1206
Kitty Hawk Dr.
Match Line-B





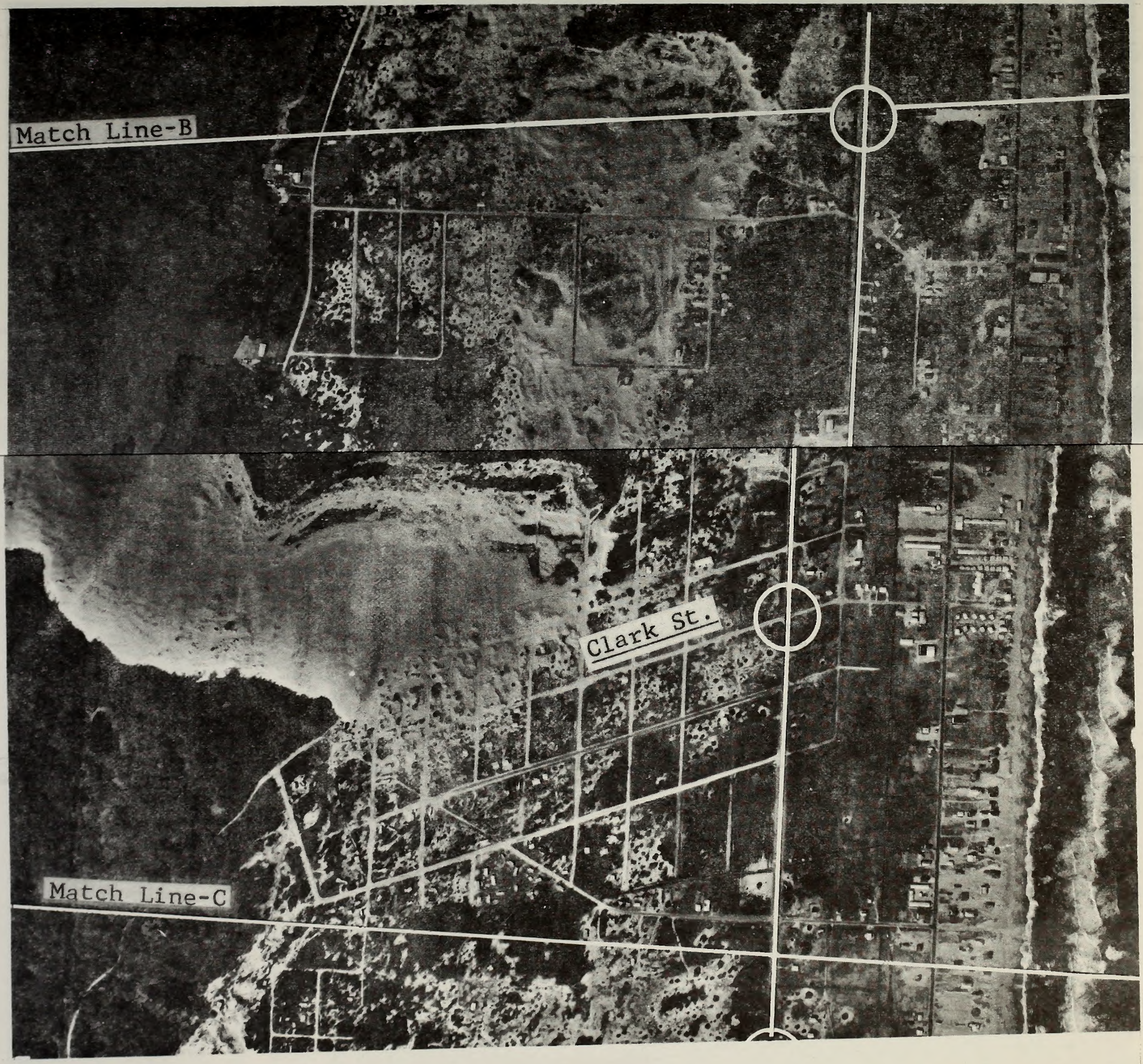
PLANNING AND RESEARCH DEPARTMENT
NORTH CAROLINA STATE HIGHWAY COMMISSION

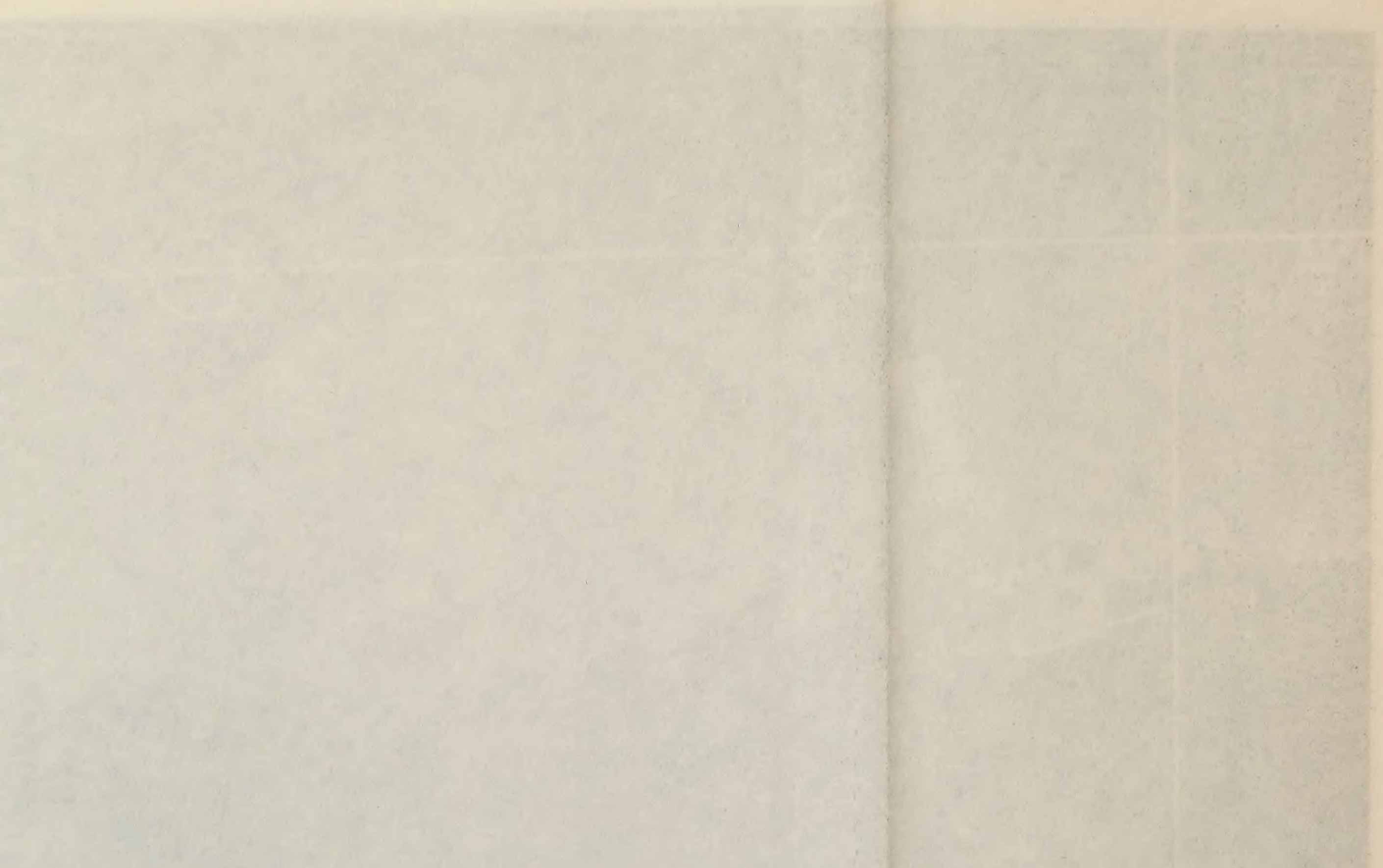
Intersection Locations
US 158 Bypass

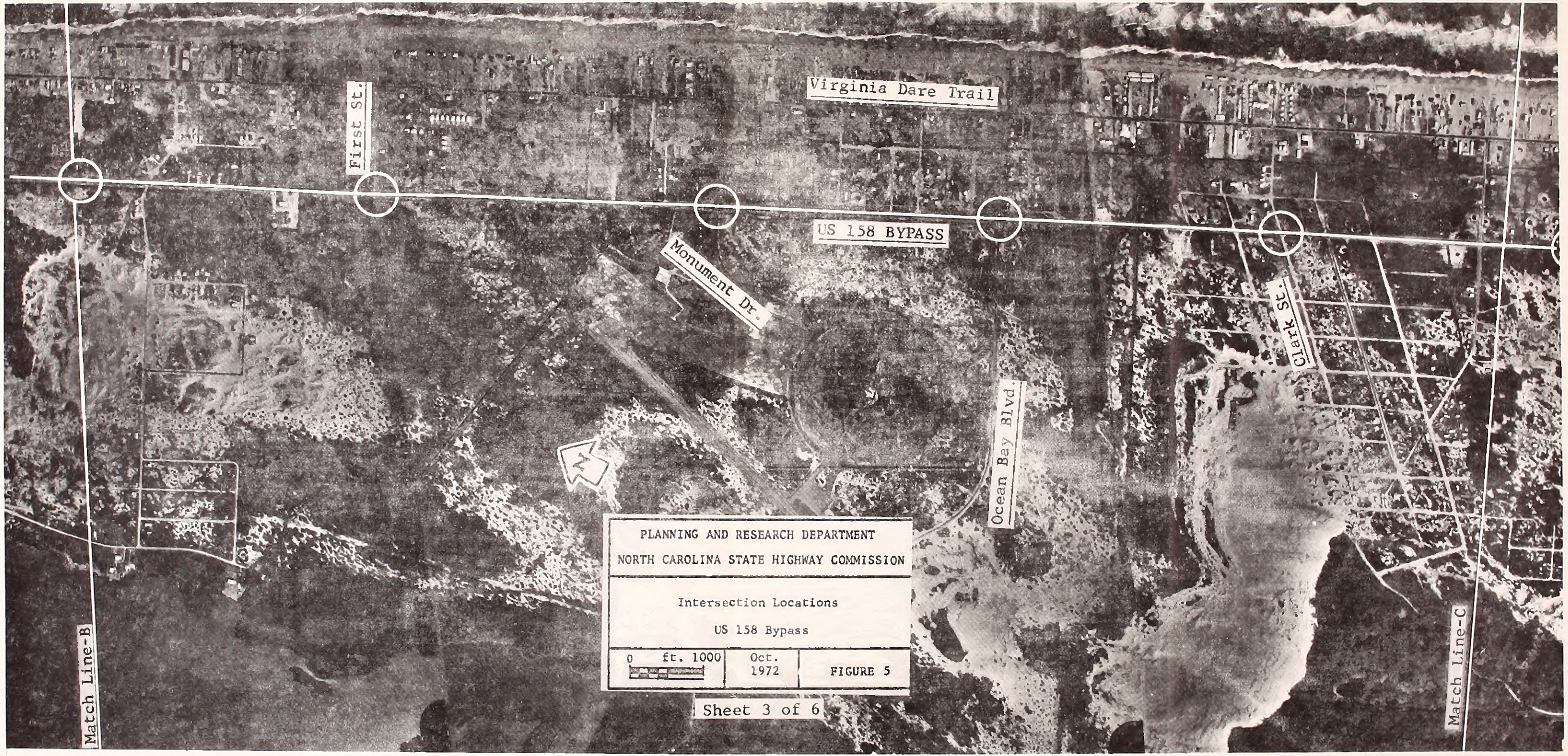
Oct. 1972

FIGURE 5

Sheet 2 of 6


Match Line-B
Clark St.
Match Line-C





PLANNING AND RESEARCH DEPARTMENT

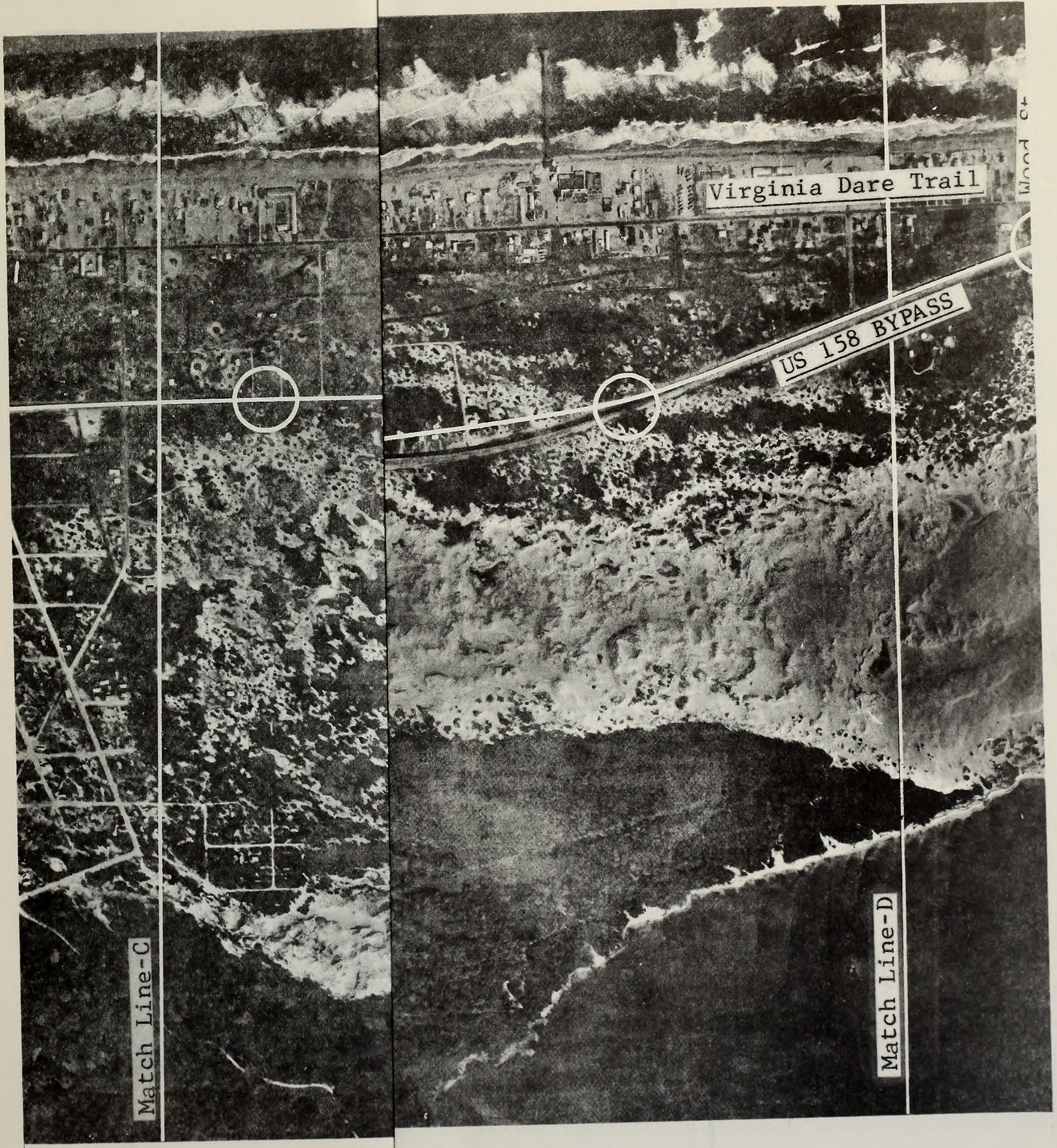
NORTH CAROLINA STATE HIGHWAY COMMISSION

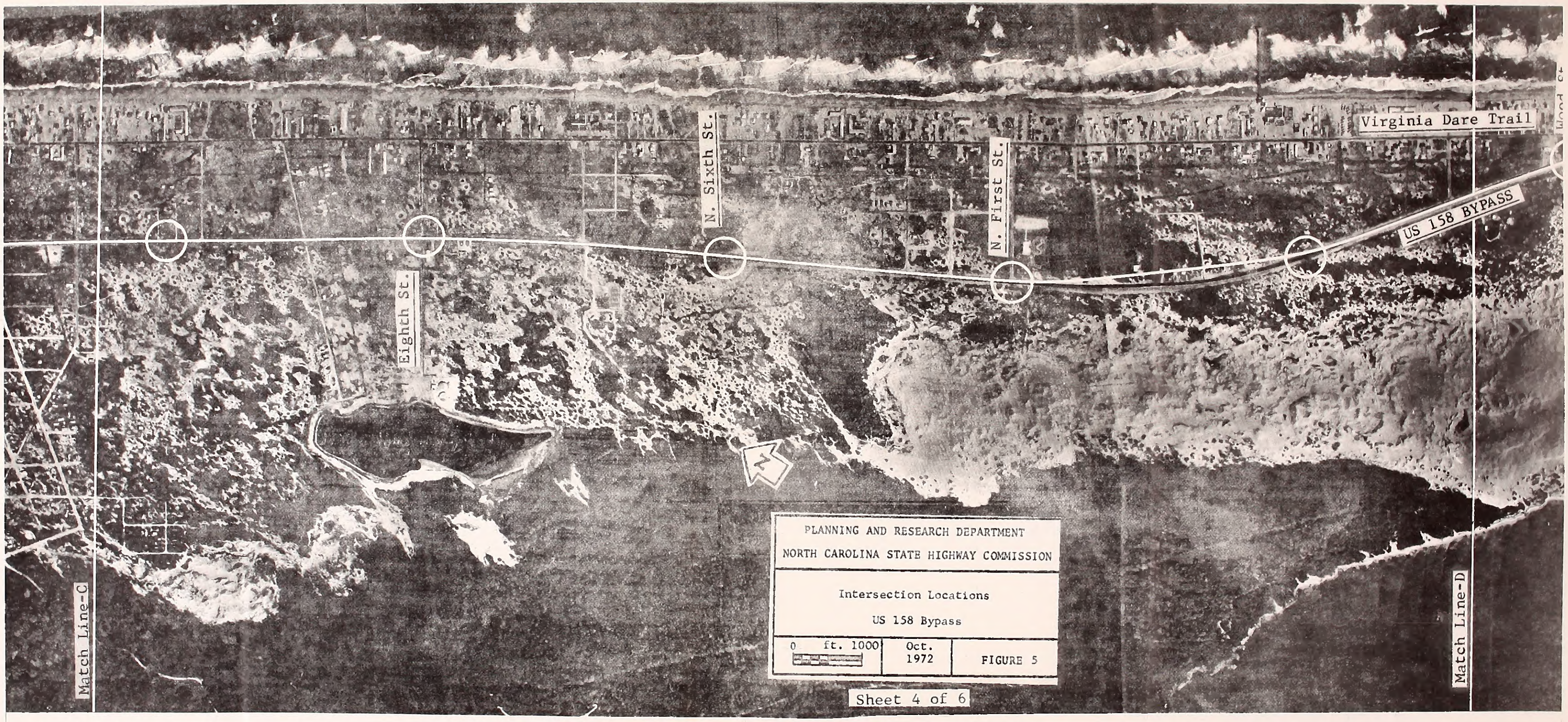
Intersection Locations

US 158 Bypass

0 ft. 1000	Oct. 1972	FIGURE 5

Sheet 3 of 6


Virginia Dare Trail
Wood St
US 158 BYPASS
Match Line-C
Match Line-D



PLANNING AND RESEARCH DEPARTMENT
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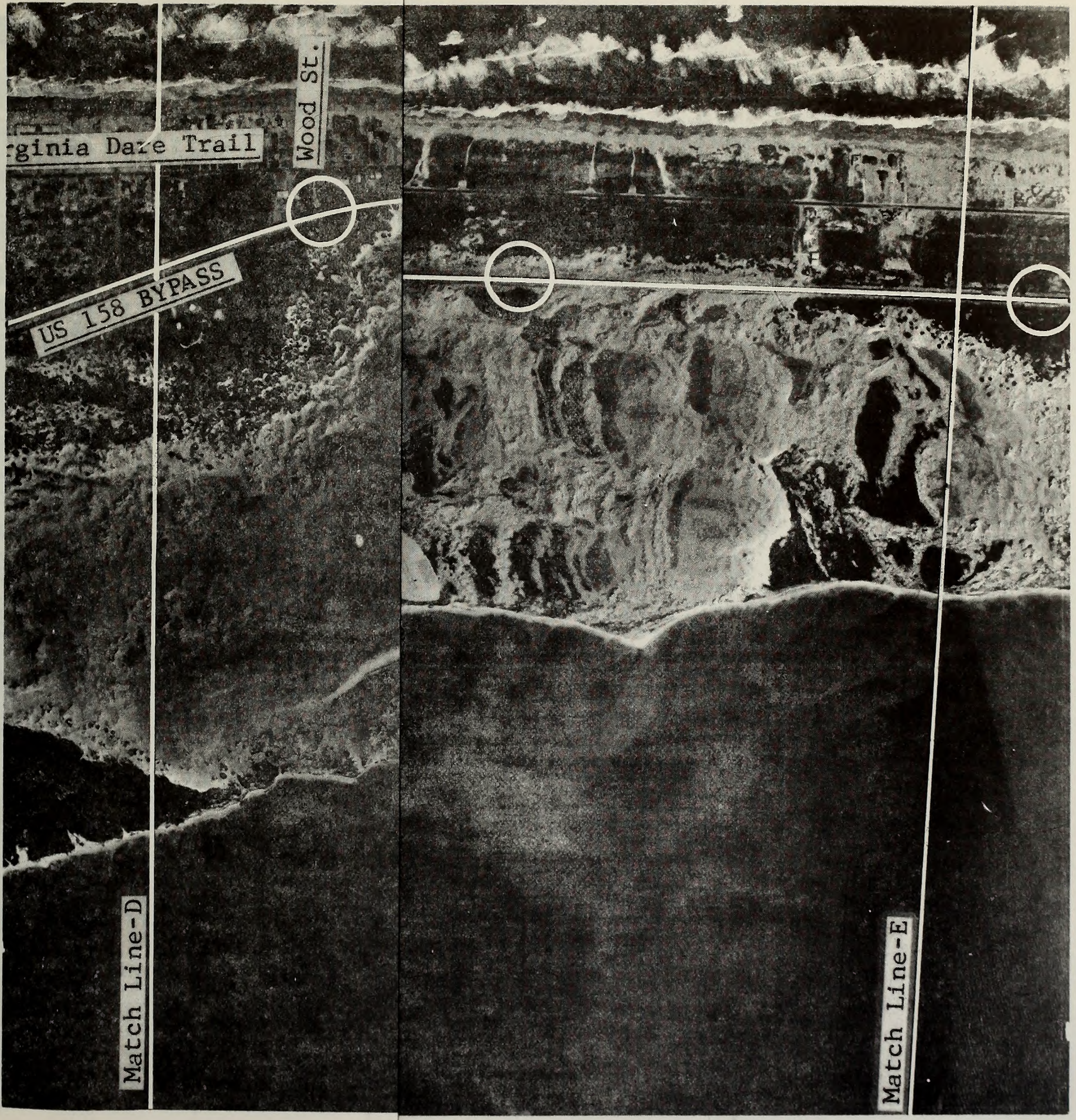
Intersection Locations

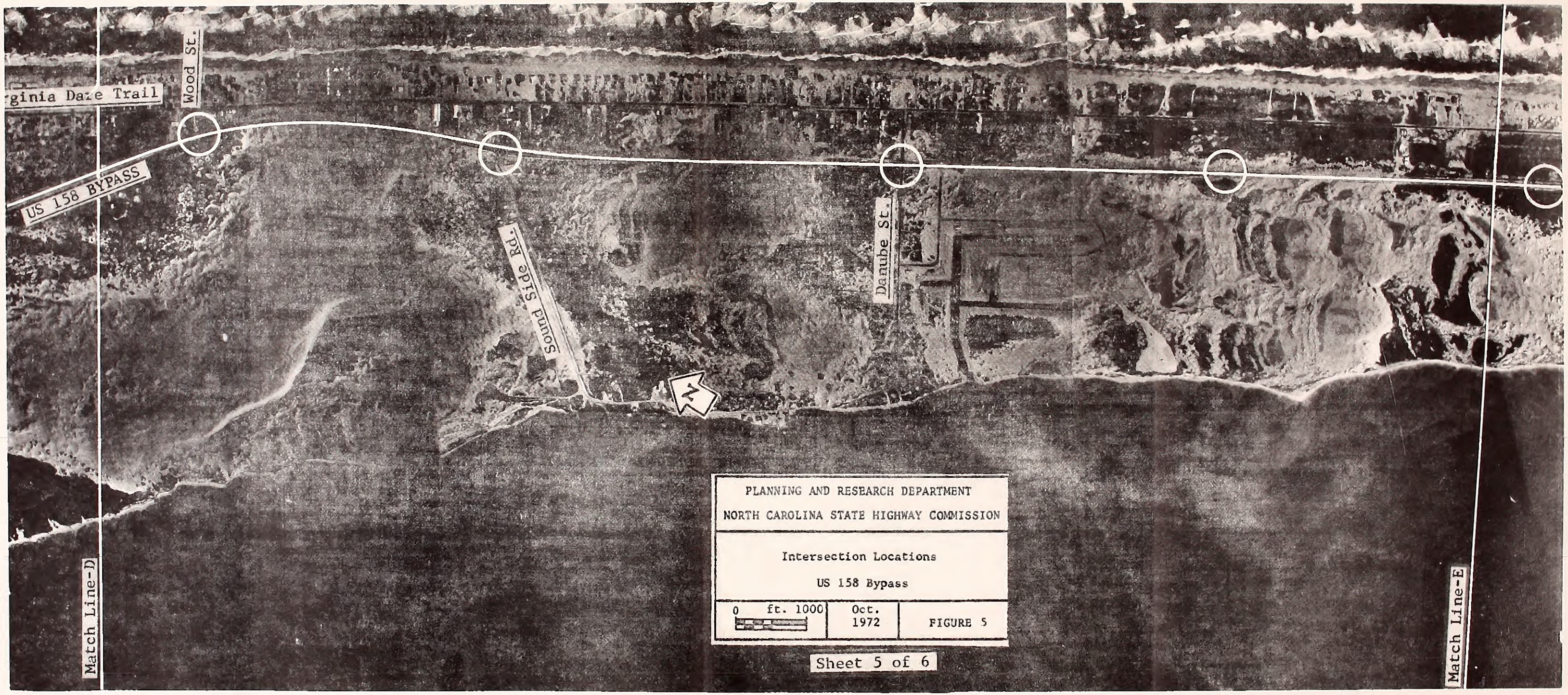
US 158 Bypass

Oct. 1972

FIGURE 5

Sheet 4 of 6


rginia Dare Trail
Wood St.
US 158 BYPASS
Match Line-D
Match Line-E



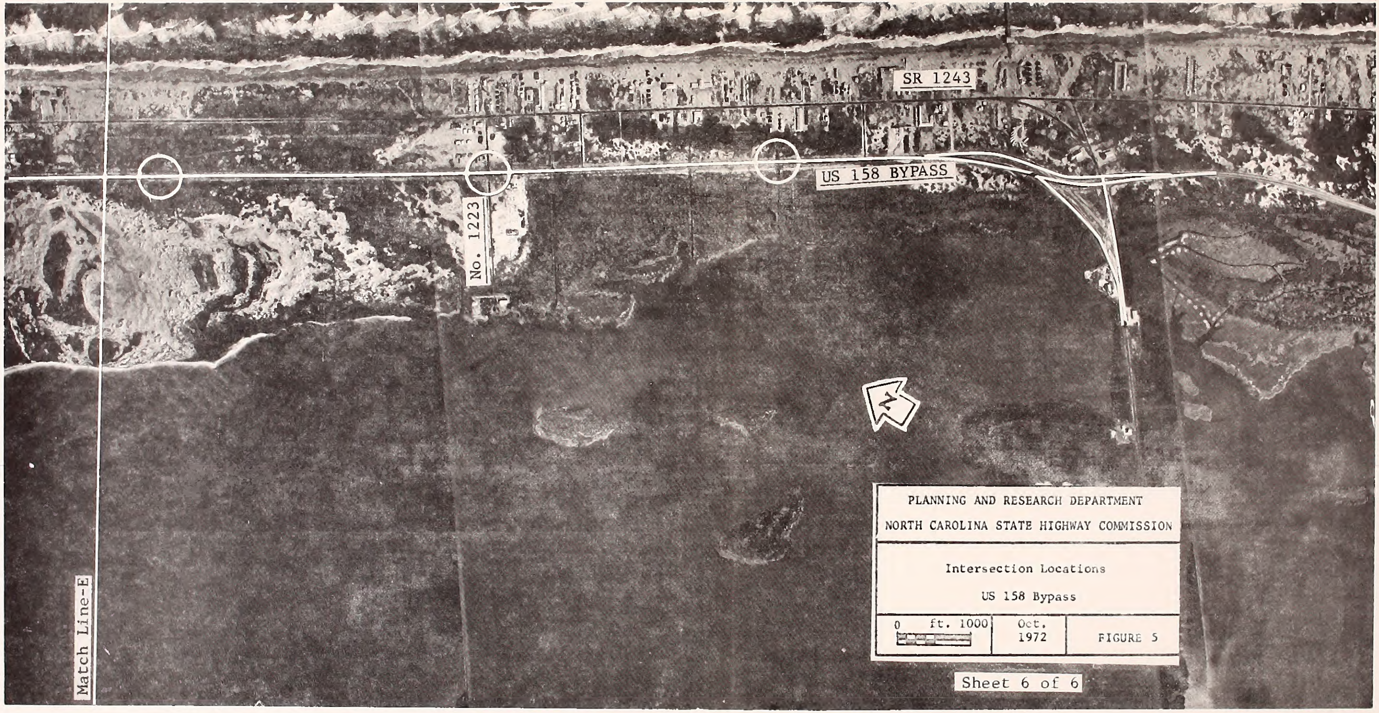
PLANNING AND RESEARCH DEPARTMENT
NORTH CAROLINA STATE HIGHWAY COMMISSION

Intersection Locations
US 158 Bypass

Oct. 1972

FIGURE 5

Sheet 5 of 6



PLANNING AND RESEARCH DEPARTMENT
NORTH CAROLINA STATE HIGHWAY COMMISSION

Intersection Locations

US 158 Bypass

Oct. 1972

FIGURE 5

Sheet 6 of 6

Functional Classification of Streets and Highways

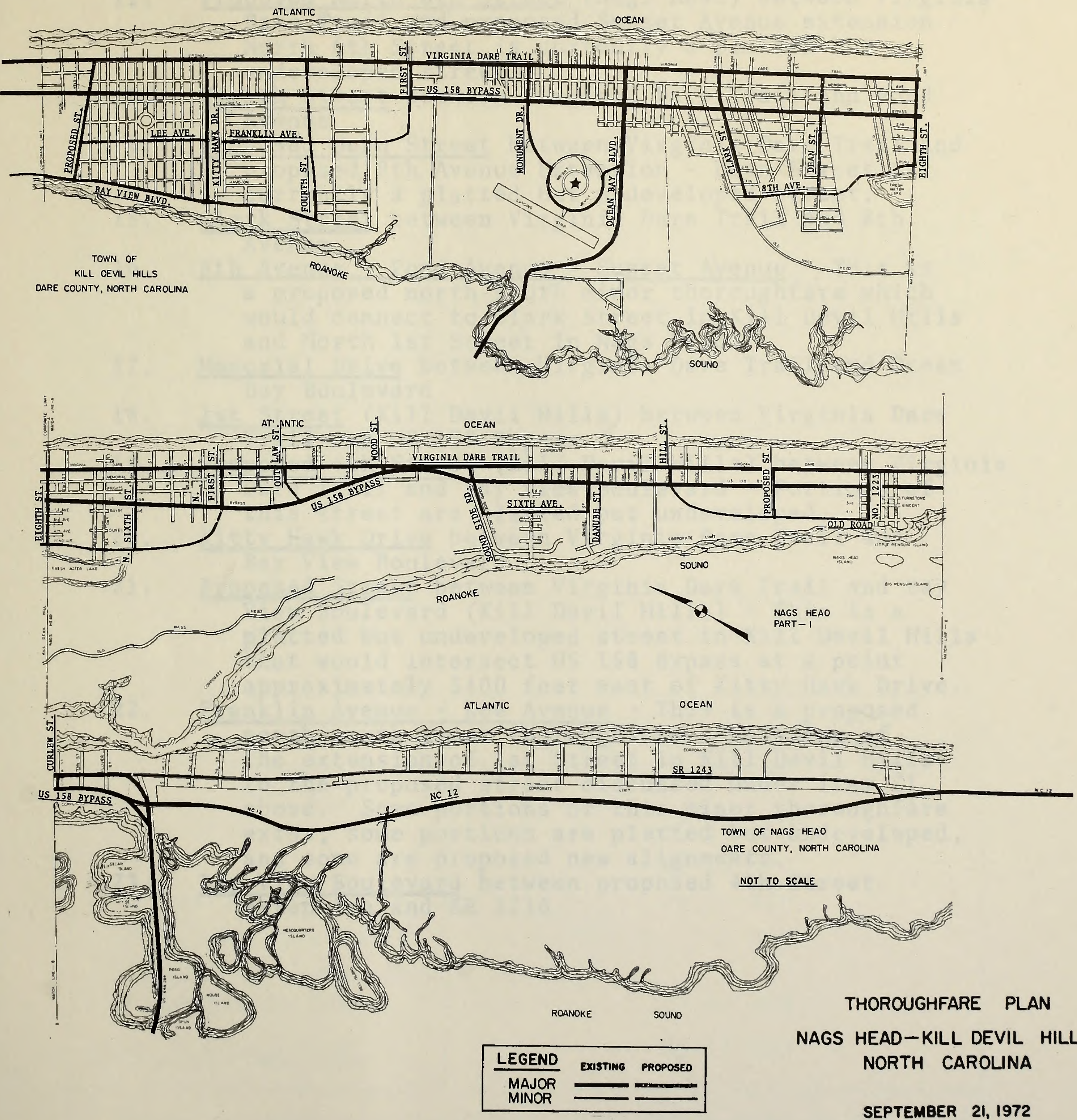
The recommended thoroughfare plan for Nags Head and Kill Devil Hills (Figure 6) consists of the following functional classification of existing and proposed streets and highways.

Major Thoroughfares

1. US 158 Bypass
2. NC 42
3. US 64 - 264
4. Virginia Dare Trail (US 158 Business)
5. Ocean Bay Boulevard - Colington Road (SR 1217)

Minor Thoroughfares

1. SR 1243
2. Curlew Street between Virginia Dare Trail and US 158 Bypass
3. Street No. 1223 (Nags Head) between Virginia Dare Trail and Old Road
4. Proposed New Street connecting Virginia Dare Trail and proposed Hill Street Extension. This proposed street intersects US 158 Bypass approximately 3400 feet north of Street No. 1223.
5. Proposed Hill Street Extension - Hill Street is currently a platted but undeveloped street. It is proposed that Hill Street be extended west and south to Old Road to serve as a collector type street.
6. Danube Street between Virginia Dare Trail and proposed 6th Avenue extension
7. Sound Side Road between Virginia Dare Trail and proposed 6th Avenue extension
8. 6th Avenue Extension (Nags Head) - 6th Avenue is currently a platted but undeveloped street. It is proposed that a minor thoroughfare be constructed generally along the alignment to connect Danube Street and Sound Side Road to function as a north-south collector street.
9. Wood Street between Virginia Dare Trail and US 158 Bypass
10. Proposed Outlaw Street Extension - This proposed street would connect to US 158 Bypass approximately 3200 feet south of North 1st Street (Nags Head).
11. North 1st Street (Nags Head) between Virginia Dare Trail and US 158 Bypass



THOROUGHFARE PLAN
NAGS HEAD—KILL DEVIL HILLS
NORTH CAROLINA

SEPTEMBER 21, 1972

FIGURE 6

12. Proposed North 6th Street (Nags Head) between Virginia Dare Trail and proposed Sunset Avenue extension - North 6th Street is currently a platted but undeveloped street.
13. Eighth Street between Virginia Dare Trail and Pond Avenue
14. Proposed Dean Street between Virginia Dare Trail and proposed 8th Avenue Extension - Dean Street is currently a platted but undeveloped street.
15. Clark Street between Virginia Dare Trail and 8th Avenue
16. 8th Avenue - Pond Avenue - Sunset Avenue - This is a proposed north-south minor thoroughfare which would connect to Clark Street in Kill Devil Hills and North 1st Street in Nags Head.
17. Memorial Drive between Virginia Dare Trail and Ocean Bay Boulevard
18. 1st Street (Kill Devil Hills) between Virginia Dare Trail and US 158 Bypass
19. Proposed 4th Street (Kill Devil Hills) between Virginia Dare Trail and Bay View Boulevard - Portions of this street are platted but undeveloped.
20. Kitty Hawk Drive between Virginia Dare Trail and Bay View Boulevard
21. Proposed Street between Virginia Dare Trail and Bay View Boulevard (Kill Devil Hills) - This is a platted but undeveloped street in Kill Devil Hills that would intersect US 158 Bypass at a point approximately 3400 feet east of Kitty Hawk Drive.
22. Franklin Avenue - Lee Avenue - This is a proposed north-south minor thoroughfare consisting of the extension of 1st Street in Kill Devil Hills to the proposed street discussed under item 21 above. Some portions of this minor thoroughfare exist, some portions are platted but undeveloped, and some are proposed new alignments.
23. Bay View Boulevard between proposed 4th Street extension and SR 1216

V. DESIGN REQUIREMENTS

Design requirements for thoroughfares vary according to the desired capacity and level of service to be provided. Thus, universal standards to be followed in the design of thoroughfares are not practical and each street section must be individually analyzed.

The level of service is a function of the ease of movement experienced by motorists using the facility. The ability of a motorist to drive at a desired speed is dependent upon the physical design of the street; the amount and character of traffic control devices; the influence and character of traffic generated by abutting property; and imposed speed restrictions. The level of service is generally indicated by the over-all travel speed[1] experienced by traffic. Recommended minimum levels of service for thoroughfares included in the proposed Nags Head - Kill Devil Hills Thoroughfare Plan are given in Table 1.

TABLE 1

Desirable Levels of Service for Thoroughfares

In Nags Head - Kill Devil Hills Planning Area

Facility	Overall Travel Speed During Peak Traffic Conditions
Major Thoroughfares	
US 158 Bypass	45-55 MPH[a]
NC 42	45-55 MPH
US 64-264	45-55 MPH
Virginia Dare Trail	35 MPH
Ocean Bay Boulevard - Colington Road	35-45 MPH
Minor Thoroughfares	25-35 MPH

[a] Major intersection locations shown previously in Figure 5 were established so as to maintain this level of service.

---

[1] The overall speed is the total distance traveled divided by the total time required, including all traffic delays.

There are many factors which influence the traffic capacity of a street; i.e., the number of vehicles that a street can accommodate. Typical capacities for various street cross sections are related here for general guidance. Table 2 indicates typical capacity standards for various types of facilities in terms of vehicles per hour per lane and for a 24-hour period. These design volumes are based on average traffic characteristics including 20 percent turning movements at principal intersections, 10 percent truck volumes, and approximately 50 percent green time at signalized intersections. The 24-hour volumes assume that the peak hour comprises 10 percent of the daily total with 60-70 percent of the peak hour traffic in one direction.

TABLE 2

Typical Capacity Design Standards

Facility	Practical Capacity[a]	
	Vehicles Per Hour Per Lane	Vehicles Per Day
Two Lanes Plus Parking		
Two-way	400-500	5,700-8,200
One-way	450-600	10,000-13,000
Four Lanes, No Parking		
Two-way	450-550	13,000-18,500
Two-way with special measures	600-800	17,000-26,000

[a] These typical capacities are based on average traffic flow characteristics with 10 percent of the 24-hour volume during the peak hour and 60-70 percent hour volume during the peak hour traffic in the predominant direction. For intersections the green time has been assumed at 50 percent.

The cross section recommendation for the US 158 Bypass was previously given in Figure 4. Typical cross section recommendations for other thoroughfares are shown in Figure 7. Specific cross section recommendations for the other thoroughfares are listed in Table 3.

TABLE 3

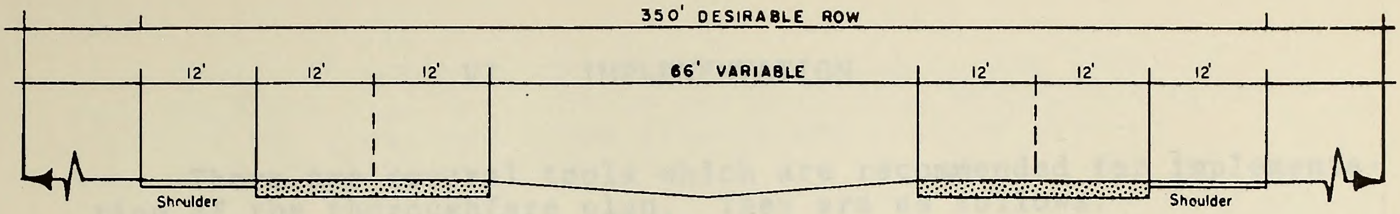
Cross Section Recommendations

Facility	Existing		Recommended Cross Section
	Width	Row	
Major Thoroughfares			
1. NC 42	22'	60'[a]	A[b]
2. Ocean Bay Blvd.-Colington Rd. (SR 1217)	18'-20'	N.A.[c]	C
3. US 64-264	20'-22'	60'	A[b]
4. Virginia Dare Trail	20'	60'	B
Minor Thoroughfares			
1. Bay View Blvd.	Variable	N.A.[c]	B
2. SR 1243	18'	N.A.[c]	B
3. All Others	—	—	D

[a] Indicated ROW for section between SR 1243 and Planning Area Boundary. No information available for section between SR 1243 and US 64-264.

[b] Recommended cross section if capacity deficiencies develop.

[c] Not available.



FOUR LANES DIVIDED WITH MEDIAN – RURAL

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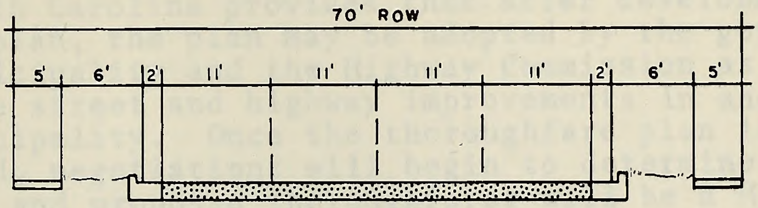

FOUR LANES* – URBAN

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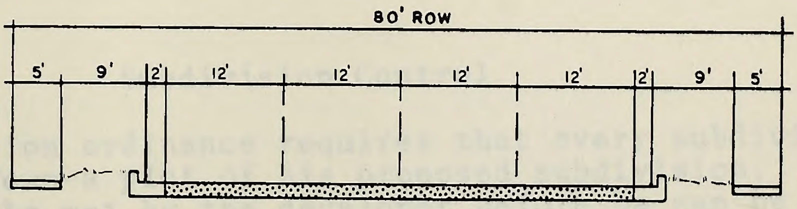

FOUR LANES* – URBAN

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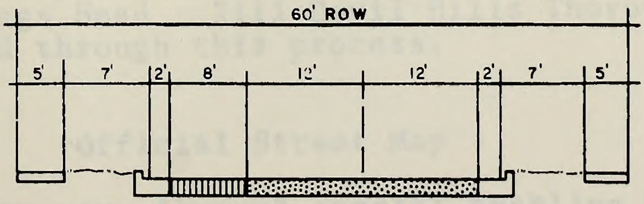

* ADDITIONAL LEFT TURN LANE MAY BE REQUIRED AT MAJOR INTERSECTIONS.

TWO LANES URBAN PARKING ON ONE SIDE

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TYPICAL THOROUGHFARE CROSS SECTIONS

FIGURE 7

VI. IMPLEMENTATION

There are several tools which are recommended for implementation of the thoroughfare plan. They are as follows:

State-Municipal Adoption of the Thoroughfare Plan

Chapter 136, Article 3A, Section 136-66.2 of the General Statutes of North Carolina provides that after development of a thoroughfare plan, the plan may be adopted by the governing body of the municipality and the Highway Commission as the basis for future street and highway improvements in and around the municipality. Once the thoroughfare plan is mutually adopted, negotiations will begin to determine which of the existing and proposed thoroughfares will be a Highway Commission responsibility and which will be a municipal responsibility. Facilities which are designated a Highway Commission responsibility will be constructed and maintained by the Commission, however, the municipality will share in the right-of-way costs with the municipality's share of the cost to be determined at time of construction.

Subdivision Control

A subdivision ordinance requires that every subdivider submit to the Town a plot of his proposed subdivision. Certain standards must be met by the developer before he can be issued a building permit to construct his development. Through this process it is possible to reserve or protect the necessary rights-of-ways for projected streets which are a part of the thoroughfare plan and to require street construction in accordance with the plan. Many of the minor thoroughfares proposed in the Nags Head - Kill Devil Hills Thoroughfare Plan can be implemented through this process.

Official Street Map

A municipality may, through special enabling legislation, adopt an official street map which indicates both existing and future street lines. No new construction or reconstruction of structures would be permitted within the designated future street lines. This would over a period of time, reduce the cost of additional right-of-way along densely developed thoroughfares which will require widening at some future date.

This tool would be particularly useful to the Towns of Nags Head and Kill Devil Hills for obtaining needed additional right-of-way along developed streets and platted streets that have not been constructed.

Zoning

A zoning ordinance can be beneficial to thoroughfare planning in that planned locations of various land uses and planned densities of dwellings can be realized. This provides a degree of stability on which to make future traffic projections and to plan streets and highways.

Other benefits of a good zoning ordinance are: (1) the establishment of standards of development which will aid traffic operations on thoroughfares; (2) the minimization of strip commercial development which creates traffic friction and increases the traffic accident potential; and (3) the requirement for provision of off-street parking by new developers with the purpose of eventual prohibition of all curb parking on major thoroughfares.

Urban Renewal

Urban renewal is the term used to describe the ridding of cities of blight. It is one of the few tools available for correcting basic mistakes in the existing street pattern.

The urban renewal program is carried out under the framework of the Federal Housing Act of 1954, as amended, and consists of a three-fold attack on blight. It calls for the conservation of good areas of the cities, rehabilitation of declining areas, and for clearance of slum areas so that they may be redeveloped to good standards. If a municipality meets certain requirements as to master plan, good codes and ordinances, and citizen participation, it may obtain assistance in such a program from the Federal Government with the Government paying three-fourth of the cost of the project.

Capital Improvements Program

One of the tools which make it easier to build a planned thoroughfare system is a capital improvements program. This is a long range plan for the spending of money on street improvements, acquisition of rights-of-way, and other capital improvements within the bounds of projected revenues. Municipal funds should be

available for construction of street improvements which are a municipal responsibility, right-of-way cost sharing on facilities designated a Highway Commission responsibility, and advance purchase of right-of-way where such action is required.

Other Needed Administrative Tools

The thoroughfare planning study encountered several problems which will also be implementation problems. These included significant inaccuracies in the base mapping and numerous and extensive platted but undeveloped streets that were impossible to locate. The study also revealed that the platted grid system of streets has resulted in more land being devoted to streets than is actually needed.

It is suggested that the Towns of Nags Head and Kill Devil Hills seek legal and technical assistance to explore the means for accomplishing the following:

1. Establishment of ground control and resurvey of property boundaries and streets; and
2. Consolidation and resubdivision of those areas that have been previously subdivided but never developed.

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